

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004



Appl. No. : 09/456,249  
Applicant : Darryl E. Rubin et al.  
Filed : December 7, 1999  
Title : Computer User Interface Architecture Wherein Users  
Interact With Both Content And User Interface By  
Activating Links

TC/A.U. : 2176  
Examiner : Almari Romero Yuan

Docket No. : 003797.85089  
Confirmation No. : 6181

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

We, DARRYL E. RUBIN, ANDREW C. BAIRD, JOHN L. BEEZER, JONATHAN C. CLUTS, and SUSAN D. WOOLF, hereby declare<sup>1</sup> that:

- 1) We are named as joint inventors of the above-captioned application, U.S. Application Serial No. 09/456,249, and all claims presently pending therein;
- 2) I, DARRYL E. RUBIN, am presently employed by Microsoft Corporation (Microsoft) and have been since June 1986. Microsoft is the assignee of the above-identified application.


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<sup>1</sup> Each numbered declaration is a joint declaration unless an individual reference has been made. In such a case, the referenced individual is making the numbered declaration.

- 3) I, JONATHAN C. CLUTS, am presently employed by Microsoft and have been since October 1990. Microsoft is the assignee of the above-identified application.
- 4) I, SUSAN D. WOOLF, am presently employed by Microsoft and have been since October 1995. Microsoft is the assignee of the above-identified application.
- 5) We, ANDREW C. BAIRD and JOHN L. BEEZER, were formerly employed by Microsoft.
- 6) We were employed by Microsoft during development of the above-identified invention.
- 7) Prior to May 8, 1999, the earliest priority date of Bizweb2000.com – screenshots of an e-book, published 5/8/1999, pages 1-4 (“Bizweb2000 reference”), we conceived of and reduced to practice the invention recited in the claims of the above-captioned application.
- 8) Conception and actual reduction to practice occurred prior to May 8, 1999, as evidenced by pages 1, 2, 4, 5, and 7 of the Patent Predisclosure Document attached as Exhibit A.
- 9) Support for claims 1-5 of the above-captioned application can be found, among other places, at least within Exhibit A prepared prior to May 8, 1999.
- 10) Support for claims 1-5 can be found at least within Exhibit A, among other places, in the bullet points on page 1, and the descriptions at the bottom of page 1 and the top of page 2. In addition, the screenshots on pages 5 and 7 support claims 1-5. Claim 2 is additionally supported, among other places, by the description on page 4 of Exhibit A.
- 11) Attached Exhibit A has not been altered since it was originally prepared, except for the redaction of dates and the removal of pages 3, 6, and 8, which are not pertinent to claims 1-5.
- 12) Each of us individually represents that we are over 18 years of age and of competent mind.

13) All statements made of our own knowledge are true and all statements made on information and belief are believed to be true; and further, these statements were made with the knowledge that willful, false statement so made are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001 and that such willful, false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Respectfully submitted,

  
\_\_\_\_\_  
Darryl E. Rubin,  
Microsoft Corporation

9/17/04  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Andrew C. Baird

\_\_\_\_\_  
Date

\_\_\_\_\_  
John L. Beezer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Jonathan C. Cluts  
Microsoft Corporation

\_\_\_\_\_  
Date

\_\_\_\_\_  
Susan D. Woolf,  
Microsoft Corporation

\_\_\_\_\_  
Date

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## EXHIBIT A

Pages 1, 2, 4, 5, and 7 of Patent Predisclosure Document

# Microsoft Patent Predisclosure Document

**Title of Invention:** Electronic Web-based Interface for Reading and Annotation

**Date:**

**Document Author(s):** Darryl Rubin, Jonathan Cluts, Suze Woolf

## Introduction

*[Please provide a high level description of the invention, including the names of the people who contributed to the invention.]*

An architecture for a window-less, scroll-less, desktop-less and save-less HTML-based universal viewer interface which allows the user to read, annotate, collaborate and perform other tasks typical of knowledge work, as well as alter the interface to best suit their work patterns.

## Motivation for the Invention:

*[Describe (1) the problem addressed by the invention (e.g., limitations of prior products of Microsoft, or others), and (2) your solution to the problem (including what "new" things your invention does and a high-level description of how it does them).]*

- Create a system that is simpler (fewer commands to achieve comparable results) and more powerful (achieve results that weren't possible) than today's desktop metaphor by unifying content and user interface into a single, dynamic content mechanism that uses fewer kinds of user interface controls in a more general way.
- Provide a new metaphor for finding, consuming, storing, sharing and organizing content of interest to the user because many users find the desktop metaphor confusing and difficult to learn.
- Provide a framework for more "natural" styles of interacting, employing a minimum number common gestures such as touch, hold, erase, draw or write. Currently most desktop computers require a keyboard and mouse in order to interact with them; most pen-enabled palmtop computers have cumbersome means of interaction.
- Scales from small handheld devices to desktop computers. Currently desktop metaphors applied to small form factor devices are cluttered and difficult to use.
- Reduce complexity and confusion of the multi-windowed interface by using a model of a single main window. Usability data show that users of multi-windowed systems don't always know which actions will produce results in which window.
- Provide greater flexibility to users, content developers and third-party software developers by providing broader capabilities for customizing the user interface and creating dynamic content.
- Provide a save-less model, so that users don't need to explicitly save their work.
- Provide rich support for audio note taking with the ability to correlate and synchronize audio and textual material and to review and retrieve audio notes.
- Provide automatic and transparent synchronization between a user's computers (e.g. handheld and desktop). Current device-to-device and device-to-PC synchronization schemes are not seamless and require a great deal of configuration and attention from the user.
- Make the process of getting help about a function be the same as the process for carrying out the function. In today's user interfaces, methods for getting assistance with an interface or with content are currently separate from the content and often require completely different interactions than consuming the content.
- Make sharing and collaborating on documents easy and automatic. Today's devices and PCs have a "single-user model" at the heart of their interface metaphors; sharing content and annotations is difficult and non-intuitive.

## Description of the Invention:

*[Describe your proposed implementation of the invention, including the architecture and design details of the implementation. The design details should include a description of the component parts of, and individual operations performed by, your implementation. The use of a specific example, showing how the invention solves the problem being addressed, can be particularly helpful. You should also mention whether you have thought of any other implementations, or applications of, your invention. In most cases, 1-2 pages of description should be adequate to start the patent application process, although a more detailed description may greatly enhance the efficiency of the process.]*

**Windowless Interface** – The display may be divided into non-windowing regions in which different content may be displayed. Each region may be individually navigated without changing focus or "window"

state. Each region may include concurrent active html links without changing focus. The benefits of this architecture include reducing the complexity associated with both the design and use of the interface while still providing access to and interaction with multiple sources of concurrent content. (See also pinning (ePad) 2.doc.)

**HTML based interface** – The interface is implemented entirely as an HTML document, except that some links are links to scripts rather than to other documents or sites; activating such a link (such as by touching it) runs the linked-to script, thus making the link act as a command. Even the desktop metaphor of files and folders is expressed as lists of links on a page.

Additionally, links have properties that govern their appearance and behavior. For example, a link's properties may dictate that it appear as a blue underscored text string as in today's browser's, or as a 3D button, as a graphic icon, as a thumbnail image of the content being linked to, or even as an embedded frame that is open on the content being linked to. The ability to control a link's appearance and behavioral properties makes possible rich authoring and customization of content and the user interface.

The user may completely customize the interface (unless authored-in content controls prevent editing). Because there is no distinction between the interface and the content, the kinds of normal editing commands the user might use to alter content can be used to customize the interface. What's more, the many varied interface widgets that users currently must understand in order to perform useful work, such as dialog boxes, drop-down list boxes, etc can be done away with. Everything is simply a link on a page. Some of these links may be rendered as buttons to offer instant-gestalt affordances to new users, but architecturally they are links that may be used to search, view, and navigate either the interface or the content being viewed. Whether you are moving back/forward, sorting, or bookmarking a content page or an interface page, the concept and actions are exactly the same.

The ability to review files, folders, mail, etc by navigating through a list of the links contemporaneously is enabled by this architecture and to a lesser extent by the Windowless UI architecture. History, notes, clippings and other system-provided directories have many unique attributes as a result of the HTML-based architecture also summarized below.

**Rich Navigation** – The interface contains methods for paging within a document (previous/next) and for traversing chronology (history through back/forward). A rich model for navigation is enabled by attaching properties to links. For example, holding on a link offers additional information about where that link will lead (Link look-ahead might be displayed in thumbnail form and further holding might result in a graphical map of the links attached to that prospective destination.). Back and forward buttons by default display thumbnail views of the pages that tapping that button will lead to.

History (all the pages the user has viewed) may be viewed in a number of ways: by time, by appearance, by site, document, section, page, etc. Since all of history is saved, the users' sequence may be viewed in a number of ways: as nodes with side tracking branches, as a linear list, or as a combination of most recently viewed pages and last few task categories.

A key difference between the navigation mechanism of this invention and the prior art is that all navigation actions are saved in the navigational history. For example, if a user navigates through a set of links then goes "back" several steps, and then links through a different set of links, the user is still able to go "back" and then retrace their original path of links they navigated. In today's browser's this is not possible—recollection of the first set of documents that were "backed" over is lost.

**Annotations** – The interface allows the user to interact with content and interface so as to make it more memorable, via bookmarks, clippings, highlights, overlaid and embedded ink and audio notes (See files: *Book position (ePad) 2.doc*, *Ink layers on a browser.doc* and *Bookmark (ePad) 2.doc*. as well as additional documents to be created.) These annotations may be performed with not only different input methods, but adapted to the most convenient or natural one, such as a finger for highlighting, a stylus for writing or doodling, and speech for lengthier commentary.

The annotations exist apart from the content (as files with links to the content); therefore they can be displayed not only layered on the content in appropriate positions within the content, but in other locations and visualizations. That is, each of these annotations is available to the user not only *in situ*, in the content where it was created, but cross-referenced in automatically-created indices which can be manipulated much as described in History above: by time, by appearance, by site, document, section, page, etc. Likewise they might be shared, selectively shared or kept private with the kind of functionality described under "Collaboration."

navigate their view of the shared document to other than the currently shared page, thus automatically disengaging from the shared display, and to reengage on the shared page at any time. The interface uses a Floor request/grant/relinquish model for controlling the group display. Users are able to request control of the current group display, grant the request and relinquish control (if currently in control). Side chats can be initiated with other members attending the meeting by using the "hold-for-more-information" method: holding on a visual representation of users in the room and then selecting the chat option from a content menu. Since in this interface model, presentations are just documents, users can invoke all the standard interface methods such as written and audio note taking, searching, bookmarking, etc. on both the public presentation (if they have the floor), or on their individual private copy. Just as with other annotations, these methods result in a file stored separately from the content, but linked to it in precisely the locations the user annotated.

**Help Book** – Because the commands in the interface are simply links on a page, there isn't any difference between documentation, help, wizards and the other ways we currently attempt to help a user perform an action. Asking for help by clicking on a help link summons an appropriate help page composed on the fly from the content of the help book. The principles which underlie this composition are contextual: that is, if the user currently in the "list" or "books" of Mail Messages, the help system infers that requests for assistance are about how to perform work with Mail Messages.

#### **Related Ideas addressed in additional pre-disclosure docs**

1. Using pinning to preview list of contents, e.g., email, folders, contacts, notes, etc.; navigate within a book; or to access different content, (*file: Pinning (ePad) 2.doc*). Different than Outlook previews because it is accomplished through html links and can be done with any list of objects.
2. History can be manipulated, sorted, viewed in different ways, and the like. One feature of the history implementation is maintaining all branch extremities and including flexibility for presenting different arrangements for viewing the branches.
3. Notes can also be manipulated, sorted, viewed in different ways but also can be selected resulting in not only opening the note but also the book where the note is linked.
4. Unique thumbnail view UI for notes, history and other objects.
5. Commands implemented through links

#### **Diagrams and Flow Charts:**

*[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]*

Start Page - Main UI

### MY DOCUMENTS

Personal Viewer Memo

From the Earth to the Moon

more ...

### PROJECTS

more ...

Jon Cluts, Jon Cluts - Status

Jon Cluts, RE: Context Menus

Darryl Rubin, RE: Context Menus

### SUMMARIES

Notes Index

Clippings

History

Guide Sheet

more ...

### TODAY'S HEADLINES

Clinton leaves for Midwest Summit

U.S. stocks climb

more ...

### FINANCIAL

Amazon

Therac-25

Mutual funds

more ...

### ARTS

Behind the scenes

Latest releases from Blue Note

India's software picks

more ...

### COLUMNISTS

Hilly Diers

World Page

Vol. 1, No. 1

more ...

### WHAT'S NEW

Electronic books reviewed

Conferences on U.S. design

Updara on Ephemera

more ...

### REUTERS

General News

U.S. stocks climb

more ...

500 die in Nigerian plane crash

more ...

Sierra Leone president 24

over coup - witnesses

more ...

Italy's D'Alema says hopes to

form new coalition

more ...

Yugoslav cancels meeting,

publicly criticizes

more ...

### BUSINESS NEWS

U.S. stocks climb

small cap recovery on

more ...

Market volatility eroding

consumer wealth - McKinsey

more ...

Oil extends gains on Middle

East

more ...

German economic outlook

sees an oil shock

more ...

Prophet defies

superstition - volcano

eruption

more ...

Sierra Leone president 24

over coup - witnesses

more ...

Italy's D'Alema says hopes to

form new coalition

more ...

### seattle.sidewalk™

movies

restaurants

arts & music

places

sports

travel

### MARKETS

Market Index, Stocks, Bonds

CLAS	1001.07	▲	94.71
Standard	1044.81	▲	21.87
S&P 500	1004.34	▲	1.82
Financial	251.48	▲	4.18
Energy	808.24	▲	1.34
Commodities	101.12	▲	1.01

### PRB Public Radio International

World, US, Europe, Asia, Africa, Latin America, Middle East, Oceania

World	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:3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End Page

2
E-Mail
3

### Last Week....

**Progress**

- Drove ePad meeting with Darryl and got our overall design direction approved
- Continued daily meetings on ePad project
- Scheduled meeting with ePad and Neptune teams
- With Drew, got ePad team up on RAID, and VSS
- Got NT box in my office up and running, with ePad installed
- Met with Dave and others about team project archiving. Have defined a basic strategy
- Provided input in to Pam's home tour brainstorming meeting.
- Attended home scheduling meeting.
- Attended Legal briefing.
- Got briefed on current (and past) demo's produced by the team.

**Priorities**

- Drive graphic completion for current M2 features in ePad (11/4)
- Drive overall progress for ePad M2 milestone for PaulMa review (11/16)
- Produce first draft proposal for archiving (11/2)
- ePad proto and enter bugs in RAID (first pass 11/2 - ongoing)
- Provide direction and input for directs on projects (on going)
- Plan fun event at home (11/6)

**Problems**

- none

**Postponed**

- none

**OTHER RELATED MATERIAL**

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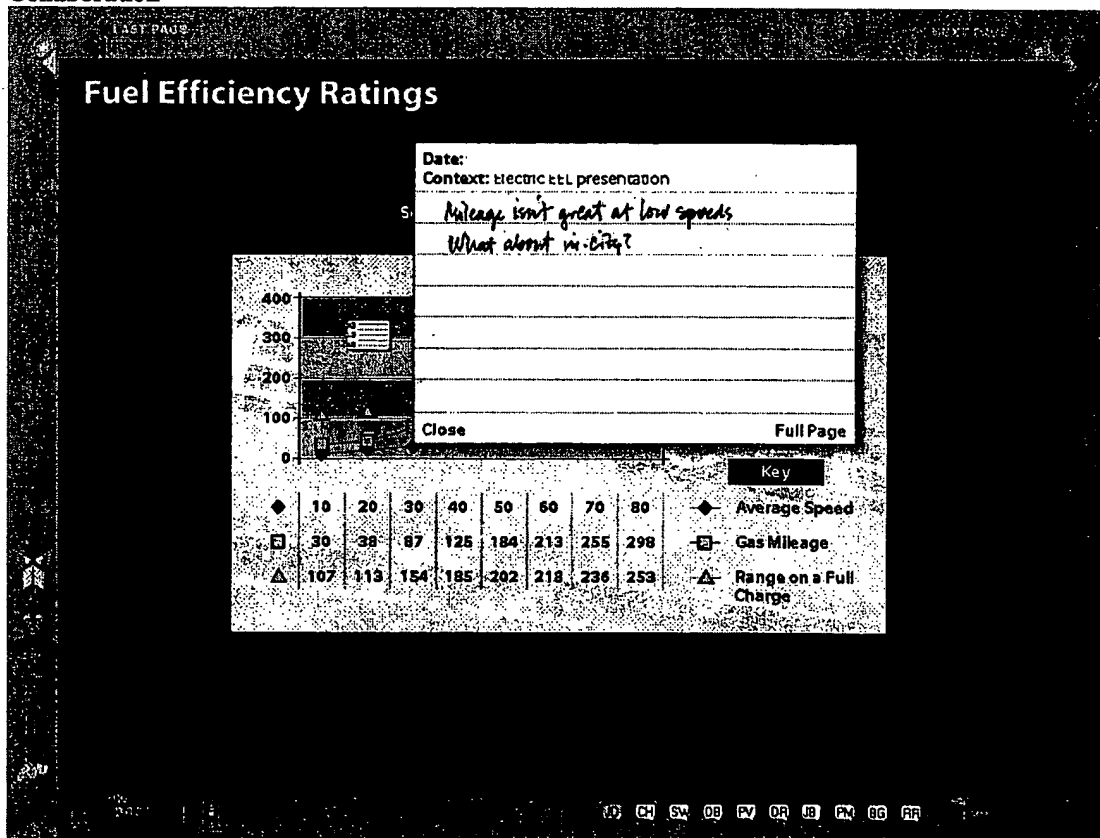
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**OTHER RELATED MESSAGES:**

- ☒ John Beezer - Status
- ☒ Drew Baird - Status
- ☒ RE: Page-Pinning

Collaboration



Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

Appl. No. : 09/456,249  
Applicant : Darryl E. Rubin et al.  
Filed : December 7, 1999  
Title : Computer User Interface Architecture Wherein Users  
Interact With Both Content And User Interface By  
Activating Links

TC/A.U. : 2176  
Examiner : Almari Romero Yuan

Docket No. : 003797.85089  
Confirmation No. : 6181

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

We, DARRYL E. RUBIN, ANDREW C. BAIRD, JOHN L. BEEZER, JONATHAN C. CLUTS, and SUSAN D. WOOLF, hereby declare<sup>1</sup> that:

- 1) We are named as joint inventors of the above-captioned application, U.S. Application Serial No. 09/456,249, and all claims presently pending therein;
- 2) I, DARRYL E. RUBIN, am presently employed by Microsoft Corporation (Microsoft) and have been since June 1986. Microsoft is the assignee of the above-identified application.

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<sup>1</sup> Each numbered declaration is a joint declaration unless an individual reference has been made. In such a case, the referenced individual is making the numbered declaration.

- 3) I, JONATHAN C. CLUTS, am presently employed by Microsoft and have been since October 1990. Microsoft is the assignee of the above-identified application.
- 4) I, SUSAN D. WOOLF, am presently employed by Microsoft and have been since October 1995. Microsoft is the assignee of the above-identified application.
- 5) We, ANDREW C. BAIRD and JOHN L. BEEZER, were formerly employed by Microsoft.
- 6) We were employed by Microsoft during development of the above-identified invention.
- 7) Prior to May 8, 1999, the earliest priority date of Bizweb2000.com – screenshots of an e-book, published 5/8/1999, pages 1-4 (“Bizweb2000 reference”), we conceived of and reduced to practice the invention recited in the claims of the above-captioned application.
- 8) Conception and actual reduction to practice occurred prior to May 8, 1999, as evidenced by pages 1, 2, 4, 5, and 7 of the Patent Predisclosure Document attached as Exhibit A.
- 9) Support for claims 1-5 of the above-captioned application can be found, among other places, at least within Exhibit A prepared prior to May 8, 1999.
- 10) Support for claims 1-5 can be found at least within Exhibit A, among other places, in the bullet points on page 1, and the descriptions at the bottom of page 1 and the top of page 2. In addition, the screenshots on pages 5 and 7 support claims 1-5. Claim 2 is additionally supported, among other places, by the description on page 4 of Exhibit A.
- 11) Attached Exhibit A has not been altered since it was originally prepared, except for the redaction of dates and the removal of pages 3, 6, and 8, which are not pertinent to claims 1-5.
- 12) Each of us individually represents that we are over 18 years of age and of competent mind.

13) All statements made of our own knowledge are true and all statements made on information and belief are believed to be true; and further, these statements were made with the knowledge that willful, false statement so made are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001 and that such willful, false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Respectfully submitted,

\_\_\_\_\_  
Darryl E. Rubin,  
Microsoft Corporation

\_\_\_\_\_  
  
Andrew C. Baird

\_\_\_\_\_  
Date

\_\_\_\_\_  
9/20/2004  
Date

\_\_\_\_\_  
John L. Beezer

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Date

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Jonathan C. Cluts  
Microsoft Corporation

\_\_\_\_\_  
Date

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Susan D. Woolf,  
Microsoft Corporation

\_\_\_\_\_  
Date

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

## **EXHIBIT A**

**Pages 1, 2, 4, 5, and 7 of Patent Predisclosure Document**

# Microsoft Patent Predisclosure Document

**Title of Invention:** Electronic Web-based Interface for Reading and Annotation

**Date:**

**Document Author(s):** Darryl Rubin, Jonathan Cluts, Suze Woolf

## Introduction

*[Please provide a high level description of the invention, including the names of the people who contributed to the invention.]*

An architecture for a window-less, scroll-less, desktop-less and save-less HTML-based universal viewer interface which allows the user to read, annotate, collaborate and perform other tasks typical of knowledge work, as well as alter the interface to best suit their work patterns.

## Motivation for the Invention:

*[Describe (1) the problem addressed by the invention (e.g., limitations of prior products of Microsoft, or others), and (2) your solution to the problem (including what "new" things your invention does and a high-level description of how it does them).]*

- Create a system that is simpler (fewer commands to achieve comparable results) and more powerful (achieve results that weren't possible) than today's desktop metaphor by unifying content and user interface into a single, dynamic content mechanism that uses fewer kinds of user interface controls in a more general way.
- Provide a new metaphor for finding, consuming, storing, sharing and organizing content of interest to the user because many users find the desktop metaphor confusing and difficult to learn.
- Provide a framework for more "natural" styles of interacting, employing a minimum number common gestures such as touch, hold, erase, draw or write. Currently most desktop computers require a keyboard and mouse in order to interact with them; most pen-enabled palmtop computers have cumbersome means of interaction.
- Scales from small handheld devices to desktop computers. Currently desktop metaphors applied to small form factor devices are cluttered and difficult to use.
- Reduce complexity and confusion of the multi-windowed interface by using a model of a single main window. Usability data show that users of multi-windowed systems don't always know which actions will produce results in which window.
- Provide greater flexibility to users, content developers and third-party software developers by providing broader capabilities for customizing the user interface and creating dynamic content.
- Provide a save-less model, so that users don't need to explicitly save their work.
- Provide rich support for audio note taking with the ability to correlate and synchronize audio and textual material and to review and retrieve audio notes.
- Provide automatic and transparent synchronization between a user's computers (e.g. handheld and desktop). Current device-to-device and device-to-PC synchronization schemes are not seamless and require a great deal of configuration and attention from the user.
- Make the process of getting help about a function be the same as the process for carrying out the function. In today's user interfaces, methods for getting assistance with an interface or with content are currently separate from the content and often require completely different interactions than consuming the content.
- Make sharing and collaborating on documents easy and automatic. Today's devices and PCs have a "single-user model" at the heart of their interface metaphors; sharing content and annotations is difficult and non-intuitive.

## Description of the Invention:

*[Describe your proposed implementation of the invention, including the architecture and design details of the implementation. The design details should include a description of the component parts of, and individual operations performed by, your implementation. The use of a specific example, showing how the invention solves the problem being addressed, can be particularly helpful. You should also mention whether you have thought of any other implementations, or applications of, your invention. In most cases, 1-2 pages of description should be adequate to start the patent application process, although a more detailed description may greatly enhance the efficiency of the process.]*

**Windowless Interface** – The display may be divided into non-windowing regions in which different content may be displayed. Each region may be individually navigated without changing focus or "window"

state. Each region may include concurrent active html links without changing focus. The benefits of this architecture include reducing the complexity associated with both the design and use of the interface while still providing access to and interaction with multiple sources of concurrent content. (See also pinning (ePad) 2.doc.)

**HTML based interface** – The interface is implemented entirely as an HTML document, except that some links are links to scripts rather than to other documents or sites; activating such a link (such as by touching it) runs the linked-to script, thus making the link act as a command. Even the desktop metaphor of files and folders is expressed as lists of links on a page.

Additionally, links have properties that govern their appearance and behavior. For example, a link's properties may dictate that it appear as a blue underscored text string as in today's browser's, or as a 3D button, as a graphic icon, as a thumbnail image of the content being linked to, or even as an embedded frame that is open on the content being linked to. The ability to control a link's appearance and behavioral properties makes possible rich authoring and customization of content and the user interface.

The user may completely customize the interface (unless authored-in content controls prevent editing). Because there is no distinction between the interface and the content, the kinds of normal editing commands the user might use to alter content can be used to customize the interface. What's more, the many varied interface widgets that users currently must understand in order to perform useful work, such as dialog boxes, drop-down list boxes, etc can be done away with. Everything is simply a link on a page. Some of these links may be rendered as buttons to offer instant-gestalt affordances to new users, but architecturally they are links that may be used to search, view, and navigate either the interface or the content being viewed. Whether you are moving back/forward, sorting, or bookmarking a content page or an interface page, the concept and actions are exactly the same.

The ability to review files, folders, mail, etc by navigating through a list of the links contemporaneously is enabled by this architecture and to a lesser extent by the Windowless UI architecture. History, notes, clippings and other system-provided directories have many unique attributes as a result of the HTML-based architecture also summarized below.

**Rich Navigation** – The interface contains methods for paging within a document (previous/next) and for traversing chronology (history through back/forward). A rich model for navigation is enabled by attaching properties to links. For example, holding on a link offers additional information about where that link will lead (Link look-ahead might be displayed in thumbnail form and further holding might result in a graphical map of the links attached to that prospective destination.). Back and forward buttons by default display thumbnail views of the pages that tapping that button will lead to.

History (all the pages the user has viewed) may be viewed in a number of ways: by time, by appearance, by site, document, section, page, etc. Since all of history is saved, the users' sequence may be viewed in a number of ways: as nodes with side tracking branches, as a linear list, or as a combination of most recently viewed pages and last few task categories.

A key difference between the navigation mechanism of this invention and the prior art is that all navigation actions are saved in the navigational history. For example, if a user navigates through a set of links then goes "back" several steps, and then links through a different set of links, the user is still able to go "back" and then retrace their original path of links they navigated. In today's browser's this is not possible—recollection of the first set of documents that were "backed" over is lost.

**Annotations** – The interface allows the user to interact with content and interface so as to make it more memorable, via bookmarks, clippings, highlights, overlaid and embedded ink and audio notes (See files: *Book position (ePad) 2.doc*, *Ink layers on a browser.doc* and *Bookmark (ePad) 2.doc*. as well as additional documents to be created.) These annotations may be performed with not only different input methods, but adapted to the most convenient or natural one, such as a finger for highlighting, a stylus for writing or doodling, and speech for lengthier commentary.

The annotations exist apart from the content (as files with links to the content); therefore they can be displayed not only layered on the content in appropriate positions within the content, but in other locations and visualizations. That is, each of these annotations is available to the user not only *in situ*, in the content where it was created, but cross-referenced in automatically-created indices which can be manipulated much as described in History above: by time, by appearance, by site, document, section, page, etc. Likewise they might be shared, selectively shared or kept private with the kind of functionality described under "Collaboration."

navigate their view of the shared document to other than the currently shared page, thus automatically disengaging from the shared display, and to reengage on the shared page at any time. The interface uses a Floor request/grant/relinquish model for controlling the group display. Users are able to request control of the current group display, grant the request and relinquish control (if currently in control). Side chats can be initiated with other members attending the meeting by using the "hold-for-more-information" method: holding on a visual representation of users in the room and then selecting the chat option from a content menu. Since in this interface model, presentations are just documents, users can invoke all the standard interface methods such as written and audio note taking, searching, bookmarking, etc. on both the public presentation (if they have the floor), or on their individual private copy. Just as with other annotations, these methods result in a file stored separately from the content, but linked to it in precisely the locations the user annotated.

**Help Book** – Because the commands in the interface are simply links on a page, there isn't any difference between documentation, help, wizards and the other ways we currently attempt to help a user perform an action. Asking for help by clicking on a help link summons an appropriate help page composed on the fly from the content of the help book. The principles with underlie this composition are contextual: that is, if the user currently in the "list" or "books" of Mail Messages, the help system infers that requests for assistance are about how to perform work with Mail Messages.

**Related Ideas addressed in additional pre-disclosure docs**

1. Using pinning to preview list of contents, e.g., email, folders, contacts, notes, etc.; navigate within a book; or to access different content, (*file: Pinning (ePad) 2.doc*). Different than Outlook previews because it is accomplished through html links and can be done with any list of objects.
2. History can be manipulated, sorted, viewed in different ways, and the like. One feature of the history implementation is maintaining all branch extremities and including flexibility for presenting different arrangements for viewing the branches.
3. Notes can also be manipulated, sorted, viewed in different ways but also can be selected resulting in not only opening the note but also the book where the note is linked.
4. Unique thumbnail view UI for notes, history and other objects.
5. Commands implemented through links

**Diagrams and Flow Charts:**

*[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]*



## **Book – Table of Contents (links)**

PAGE: 5

End Page

2
E-Mail
3

### Last Week....

#### Progress

- Drove ePad meeting with Darryl and got our overall design direction approved
- Continued daily meetings on ePad project
- Scheduled meeting with ePad and Neptune teams
- With Crew, got ePad team up on RAID, and VSS
- Got NT box in my office up and running, with ePad installed
- Met with Dave and others about team project archiving. Have defined a basic strategy
- Provided input in to Pam's home tour brainstorming meeting.
- Attended home scheduling meeting.
- Attended Legal briefing.
- Got briefed on current (and past) demo's produced by the team.

#### Priorities

- Drive graphic completion for current M2 features in ePad (11/4)
- Drive overall progress for ePad M2 milestone for PaulMa review (11/18)
- Produce first draft proposal for archiving (11/2)
- ePad proto and enter bugs in RAID (first pass 11/2 - ongoing)
- Provide direction and input for directs on projects (on going)
- Plan fun event at home (11/6)

#### Problems

- none

#### Postponed

- none

#### OTHER RELATED MATERIAL

☒ **BY THREAD:**  
Follow the discussion of this topic.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

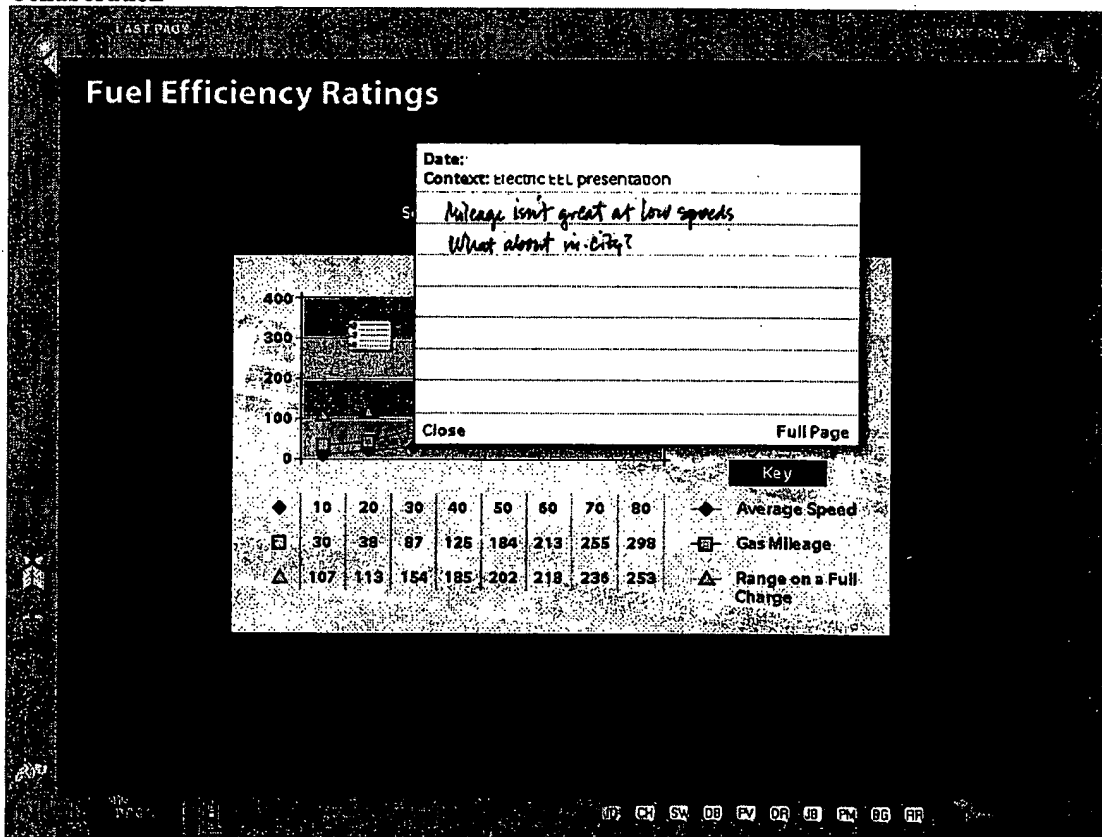
☒ **BY SENDER:**  
Show other messages from this address.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY DATE:**  
View the next or previous message in date order.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

#### OTHER RELATED MESSAGES:

- ☒ John Beezer - Status
- ☒ Drew Baird - Status
- ☒ RE: Page-Pinning

Collaboration


UP CH SW DB EV OR JB PM DB RR
PAGE: 7

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

Appl. No. : 09/456,249  
Applicant : Darryl E. Rubin et al.  
Filed : December 7, 1999  
Title : Computer User Interface Architecture Wherein Users  
Interact With Both Content And User Interface By  
Activating Links

TC/A.U. : 2176  
Examiner : Almari Romero Yuan

Docket No. : 003797.85089  
Confirmation No. : 6181

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

We, DARRYL E. RUBIN, ANDREW C. BAIRD, JOHN L. BEEZER, JONATHAN C. CLUTS, and SUSAN D. WOOLF, hereby declare<sup>1</sup> that:

- 1) We are named as joint inventors of the above-captioned application, U.S. Application Serial No. 09/456,249, and all claims presently pending therein;
- 2) I, DARRYL E. RUBIN, am presently employed by Microsoft Corporation (Microsoft) and have been since June 1986. Microsoft is the assignee of the above-identified application.

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<sup>1</sup> Each numbered declaration is a joint declaration unless an individual reference has been made. In such a case, the referenced individual is making the numbered declaration.

- 3) I, JONATHAN C. CLUTS, am presently employed by Microsoft and have been since October 1990. Microsoft is the assignee of the above-identified application.
- 4) I, SUSAN D. WOOLF, am presently employed by Microsoft and have been since October 1995. Microsoft is the assignee of the above-identified application.
- 5) We, ANDREW C. BAIRD and JOHN L. BEEZER, were formerly employed by Microsoft.
- 6) We were employed by Microsoft during development of the above-identified invention.
- 7) Prior to May 8, 1999, the earliest priority date of Bizweb2000.com – screenshots of an e-book, published 5/8/1999, pages 1-4 (“Bizweb2000 reference”), we conceived of and reduced to practice the invention recited in the claims of the above-captioned application.
- 8) Conception and actual reduction to practice occurred prior to May 8, 1999, as evidenced by pages 1, 2, 4, 5, and 7 of the Patent Predisclosure Document attached as Exhibit A.
- 9) Support for claims 1-5 of the above-captioned application can be found, among other places, at least within Exhibit A prepared prior to May 8, 1999.
- 10) Support for claims 1-5 can be found at least within Exhibit A, among other places, in the bullet points on page 1, and the descriptions at the bottom of page 1 and the top of page 2. In addition, the screenshots on pages 5 and 7 support claims 1-5. Claim 2 is additionally supported, among other places, by the description on page 4 of Exhibit A.
- 11) Attached Exhibit A has not been altered since it was originally prepared, except for the redaction of dates and the removal of pages 3, 6, and 8, which are not pertinent to claims 1-5.
- 12) Each of us individually represents that we are over 18 years of age and of competent mind.

13) All statements made of our own knowledge are true and all statements made on information and belief are believed to be true; and further, these statements were made with the knowledge that willful, false statement so made are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001 and that such willful, false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.


Respectfully submitted,

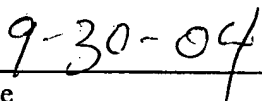
\_\_\_\_\_  
Darryl E. Rubin,  
Microsoft Corporation

\_\_\_\_\_  
Date

\_\_\_\_\_  
Andrew C. Baird

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
John L. Beezer

  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Jonathan C. Cluts  
Microsoft Corporation

\_\_\_\_\_  
Date

\_\_\_\_\_  
Susan D. Woolf,  
Microsoft Corporation

\_\_\_\_\_  
Date

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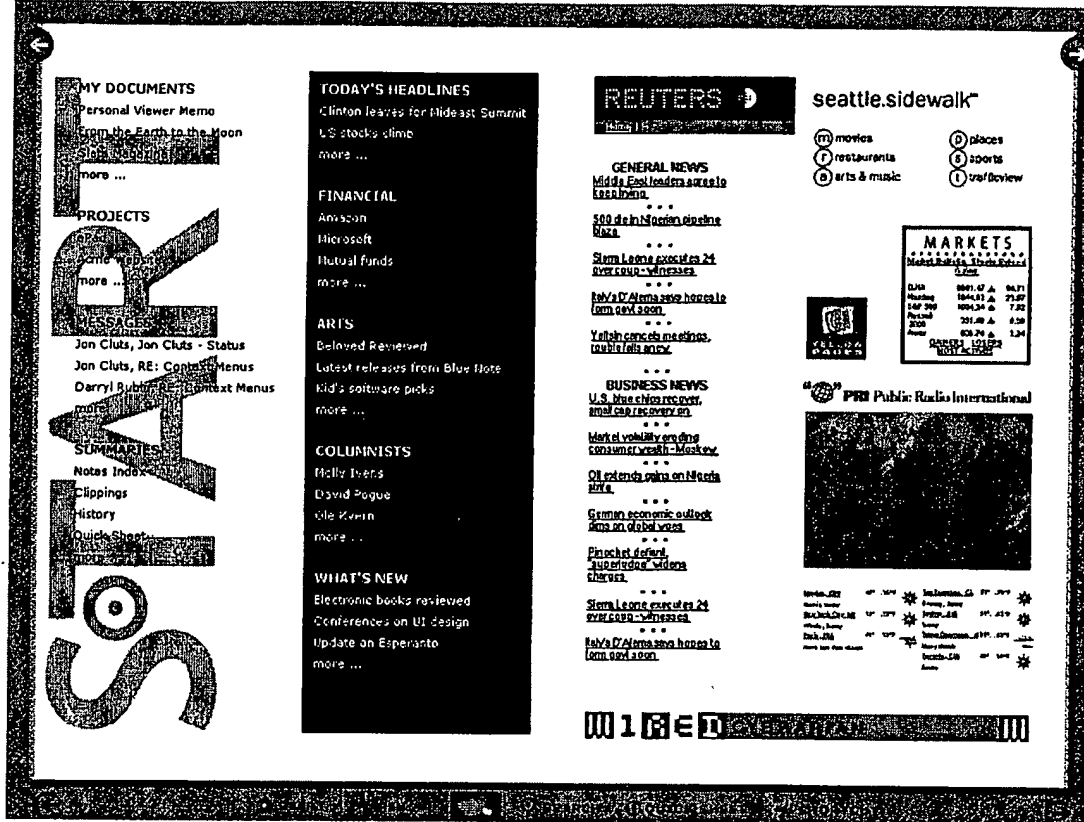
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4. Unique thumbnail view UI for notes, history and other objects.
5. Commands implemented through links

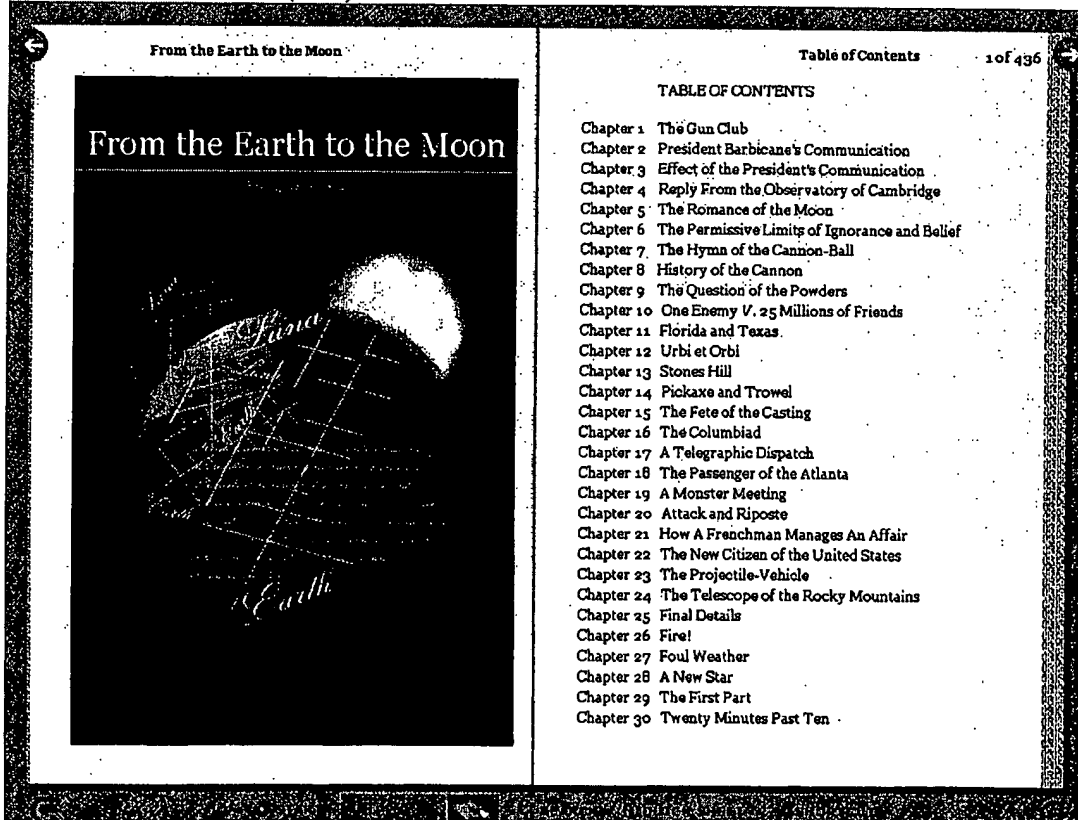
**Diagrams and Flow Charts:**

[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]

Start Page - Main UI



Book - Table of Contents (links)



End Page

2
E-Mail
3

### Last Week....

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- Scheduled meeting with ePad and Neptune teams
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- Got NT box in my office up and running, with ePad installed
- Met with Dave and others about team project archiving. Have defined a basic strategy
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- Attended home scheduling meeting.
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- Drive overall progress for ePad M2 milestone for PaulMa review (11/16)
- Produce first draft proposal for archiving (11/2)
- ePad proto and enter bugs in RAID (first pass 11/2 - ongoing)
- Provide direction and input for directs on projects (on going)
- Plan fun event at home (11/6)

#### Problems

- none

#### Postponed

- none

#### OTHER RELATED MATERIAL

☒ **BY THREAD:**  
Follow the discussion of this topic.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY SENDER:**  
Show other messages from this address.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY DATE:**  
View the next or previous message in date order.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

#### OTHER RELATED MESSAGES:

- ☒ John Beezer - Status
- ☒ Drew Baird - Status
- ☒ RE: Page-Pinning

Collaboration

11/15/98
11/15/98

## Fuel Efficiency Ratings

Date: \_\_\_\_\_  
Context: Electric EEL presentation

St: *Mileage isn't great at low speeds*  
*What about in city?*

Close Full Page

	10	20	30	40	50	60	70	80
Average Speed	30	38	87	125	184	213	255	298
Gas Mileage	107	113	154	185	202	218	236	253

**Key**

- ◆ Average Speed
- Gas Mileage
- △ Range on a Full Charge

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

Appl. No. : 09/456,249  
Applicant : Darryl E. Rubin et al.  
Filed : December 7, 1999  
Title : Computer User Interface Architecture Wherein Users  
Interact With Both Content And User Interface By  
Activating Links  
  
TC/A.U. : 2176  
Examiner : Almari Romero Yuan  
  
Docket No. : 003797.85089  
Confirmation No. : 6181

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

We, DARRYL E. RUBIN, ANDREW C. BAIRD, JOHN L. BEEZER, JONATHAN C. CLUTS, and SUSAN D. WOOLF, hereby declare<sup>1</sup> that:

- 1) We are named as joint inventors of the above-captioned application, U.S. Application Serial No. 09/456,249, and all claims presently pending therein;
- 2) I, DARRYL E. RUBIN, am presently employed by Microsoft Corporation (Microsoft) and have been since June 1986. Microsoft is the assignee of the above-identified application.

---

<sup>1</sup> Each numbered declaration is a joint declaration unless an individual reference has been made. In such a case, the referenced individual is making the numbered declaration.

- 3) I, JONATHAN C. CLUTS, am presently employed by Microsoft and have been since October 1990. Microsoft is the assignee of the above-identified application.
- 4) I, SUSAN D. WOOLF, am presently employed by Microsoft and have been since October 1995. Microsoft is the assignee of the above-identified application.
- 5) We, ANDREW C. BAIRD and JOHN L. BEEZER, were formerly employed by Microsoft.
- 6) We were employed by Microsoft during development of the above-identified invention.
- 7) Prior to May 8, 1999, the earliest priority date of Bizweb2000.com – screenshots of an e-book, published 5/8/1999, pages 1-4 (“Bizweb2000 reference”), we conceived of and reduced to practice the invention recited in the claims of the above-captioned application.
- 8) Conception and actual reduction to practice occurred prior to May 8, 1999, as evidenced by pages 1, 2, 4, 5, and 7 of the Patent Predisclosure Document attached as Exhibit A.
- 9) Support for claims 1-5 of the above-captioned application can be found, among other places, at least within Exhibit A prepared prior to May 8, 1999.
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Respectfully submitted,

\_\_\_\_\_  
Darryl E. Rubin,  
Microsoft Corporation

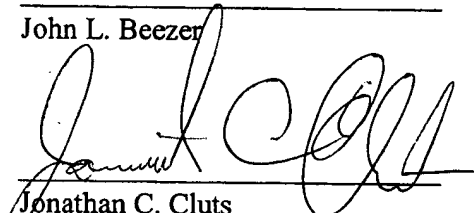
\_\_\_\_\_  
Date

\_\_\_\_\_  
Andrew C. Baird

\_\_\_\_\_  
Date

\_\_\_\_\_  
John L. Beezer

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jonathan C. Cluts  
Microsoft Corporation

\_\_\_\_\_  
Date

9-21-04

\_\_\_\_\_  
Susan D. Woolf,  
Microsoft Corporation

\_\_\_\_\_  
Date

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

## EXHIBIT A

Pages 1, 2, 4, 5, and 7 of Patent Predisclosure Document

## Microsoft Patent Predisclosure Document

**Title of Invention:** Electronic Web-based Interface for Reading and Annotation

**Date:**

**Document Author(s):** Darryl Rubin, Jonathan Cluts, Suze Woolf

### Introduction

*[Please provide a high level description of the invention, including the names of the people who contributed to the invention.]*

An architecture for a window-less, scroll-less, desktop-less and save-less HTML-based universal viewer interface which allows the user to read, annotate, collaborate and perform other tasks typical of knowledge work, as well as alter the interface to best suit their work patterns.

### Motivation for the Invention:

*[Describe (1) the problem addressed by the invention (e.g., limitations of prior products of Microsoft, or others), and (2) your solution to the problem (including what "new" things your invention does and a high-level description of how it does them).]*

- Create a system that is simpler (fewer commands to achieve comparable results) and more powerful (achieve results that weren't possible) than today's desktop metaphor by unifying content and user interface into a single, dynamic content mechanism that uses fewer kinds of user interface controls in a more general way.
- Provide a new metaphor for finding, consuming, storing, sharing and organizing content of interest to the user because many users find the desktop metaphor confusing and difficult to learn.
- Provide a framework for more "natural" styles of interacting, employing a minimum number common gestures such as touch, hold, erase, draw or write. Currently most desktop computers require a keyboard and mouse in order to interact with them; most pen-enabled palmtop computers have cumbersome means of interaction.
- Scales from small handheld devices to desktop computers. Currently desktop metaphors applied to small form factor devices are cluttered and difficult to use.
- Reduce complexity and confusion of the multi-windowed interface by using a model of a single main window. Usability data show that users of multi-windowed systems don't always know which actions will produce results in which window.
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**Windowless Interface** – The display may be divided into non-windowing regions in which different content may be displayed. Each region may be individually navigated without changing focus or "window"



state. Each region may include concurrent active html links without changing focus. The benefits of this architecture include reducing the complexity associated with both the design and use of the interface while still providing access to and interaction with multiple sources of concurrent content. (See also *pinning (ePad) 2.doc.*)

**HTML based interface** – The interface is implemented entirely as an HTML document, except that some links are links to scripts rather than to other documents or sites; activating such a link (such as by touching it) runs the linked-to script, thus making the link act as a command. Even the desktop metaphor of files and folders is expressed as lists of links on a page.

Additionally, links have properties that govern their appearance and behavior. For example, a link's properties may dictate that it appear as a blue underscored text string as in today's browser's, or as a 3D button, as a graphic icon, as a thumbnail image of the content being linked to, or even as an embedded frame that is open on the content being linked to. The ability to control a link's appearance and behavioral properties makes possible rich authoring and customization of content and the user interface.

The user may completely customize the interface (unless authored-in content controls prevent editing). Because there is no distinction between the interface and the content, the kinds of normal editing commands the user might use to alter content can be used to customize the interface. What's more, the many varied interface widgets that users currently must understand in order to perform useful work, such as dialog boxes, drop-down list boxes, etc can be done away with. Everything is simply a link on a page. Some of these links may be rendered as buttons to offer instant-gestalt affordances to new users, but architecturally they are links that may be used to search, view, and navigate either the interface or the content being viewed. Whether you are moving back/forward, sorting, or bookmarking a content page or an interface page, the concept and actions are exactly the same.

The ability to review files, folders, mail, etc by navigating through a list of the links contemporaneously is enabled by this architecture and to a lesser extent by the Windowless UI architecture. History, notes, clippings and other system-provided directories have many unique attributes as a result of the HTML-based architecture also summarized below.

**Rich Navigation** – The interface contains methods for paging within a document (previous/next) and for traversing chronology (history through back/forward). A rich model for navigation is enabled by attaching properties to links. For example, holding on a link offers additional information about where that link will lead (Link look-ahead might be displayed in thumbnail form and further holding might result in a graphical map of the links attached to that prospective destination.). Back and forward buttons by default display thumbnail views of the pages that tapping that button will lead to.

History (all the pages the user has viewed) may be viewed in a number of ways: by time, by appearance, by site, document, section, page, etc. Since all of history is saved, the users' sequence may be viewed in a number of ways: as nodes with side tracking branches, as a linear list, or as a combination of most recently viewed pages and last few task categories.

A key difference between the navigation mechanism of this invention and the prior art is that all navigation actions are saved in the navigational history. For example, if a user navigates through a set of links then goes "back" several steps, and then links through a different set of links, the user is still able to go "back" and then retrace their original path of links they navigated. In today's browser's this is not possible—recollection of the first set of documents that were "backed" over is lost.

**Annotations** – The interface allows the user to interact with content and interface so as to make it more memorable, via bookmarks, clippings, highlights, overlaid and embedded ink and audio notes (See files: *Book position (ePad) 2.doc*, *Ink layers on a browser.doc* and *Bookmark (ePad) 2.doc.* as well as additional documents to be created.) These annotations may be performed with not only different input methods, but adapted to the most convenient or natural one, such as a finger for highlighting, a stylus for writing or doodling, and speech for lengthier commentary.

The annotations exist apart from the content (as files with links to the content); therefore they can be displayed not only layered on the content in appropriate positions within the content, but in other locations and visualizations. That is, each of these annotations is available to the user not only *in situ*, in the content where it was created, but cross-referenced in automatically-created indices which can be manipulated much as described in History above: by time, by appearance, by site, document, section, page, etc. Likewise they might be shared, selectively shared or kept private with the kind of functionality described under "Collaboration."

navigate their view of the shared document to other than the currently shared page, thus automatically disengaging from the shared display, and to reengage on the shared page at any time. The interface uses a Floor request/grant/relinquish model for controlling the group display. Users are able to request control of the current group display, grant the request and relinquish control (if currently in control). Side chats can be initiated with other members attending the meeting by using the "hold-for-more-information" method: holding on a visual representation of users in the room and then selecting the chat option from a content menu. Since in this interface model, presentations are just documents, users can invoke all the standard interface methods such as written and audio note taking, searching, bookmarking, etc. on both the public presentation (if they have the floor), or on their individual private copy. Just as with other annotations, these methods result in a file stored separately from the content, but linked to it in precisely the locations the user annotated.

**Help Book** – Because the commands in the interface are simply links on a page, there isn't any difference between documentation, help, wizards and the other ways we currently attempt to help a user perform an action. Asking for help by clicking on a help link summons an appropriate help page composed on the fly from the content of the help book. The principles which underlie this composition are contextual: that is, if the user currently in the "list" or "books" of Mail Messages, the help system infers that requests for assistance are about how to perform work with Mail Messages.

**Related Ideas addressed in additional pre-disclosure docs**

1. Using pinning to preview list of contents, e.g., email, folders, contacts, notes, etc.; navigate within a book; or to access different content, (*file: Pinning (ePad) 2.doc*). Different than Outlook previews because it is accomplished through html links and can be done with any list of objects.
2. History can be manipulated, sorted, viewed in different ways, and the like. One feature of the history implementation is maintaining all branch extremities and including flexibility for presenting different arrangements for viewing the branches.
3. Notes can also be manipulated, sorted, viewed in different ways but also can be selected resulting in not only opening the note but also the book where the note is linked.
4. Unique thumbnail view UI for notes, history and other objects.
5. Commands implemented through links

**Diagrams and Flow Charts:**

*[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]*

# MY DOCUMENTS

Personal Viewer Memo  
From the Earth to the Moon  
Slideshow  
more ...

# PROJECTS

none  
more ...

# MESSAGE

Jon Cluts, Jon Cluts • Status  
Jon Cluts, RE: Context Menus  
Darryl Rubin: RE: Context Menus  
more ...

# SUMMARIES

Notes Into  
Clippings  
History  
QuickSheet  
Bookstore  
more ...

# TIPS

## TODAY'S HEADLINES

Clinton leaves for Mideast Summit  
US stocks climb  
more ...

## FINANCIAL

Amazon  
Microsoft  
Mutual funds  
more ...

## ARTS

Beloved Reviewed  
Latest releases from Blue Note  
Kid's software picks  
more ...

## COLUMNISTS

Billy Ivers  
David Pogue  
Vile Kriem  
more ...

## WHAT'S NEW

Electronic books reviewed  
Conferences on UI Design  
Update on Esperanto  
more ...

## REUTERS

**GENERAL NEWS**  
Middle East leaders agree to  
cease fire.

...  
500 die in Nigerian airplane  
crash.

...  
Spain's D'Alema says hopes to  
overcome wilderness.

...  
Italy's D'Alema says hopes to  
overcome wilderness.

...  
Yahya cancels meetings,  
resigns as prime minister.

...  
**BUSINESS NEWS**  
U.S. blue-chip retailers report  
mixed sales recovery.

...  
Mark of volatility grinds down  
consumer mood - MarketWatch.

...  
Oil prices rise on Middle East  
tensions.

...  
German economic outlook  
shows an upbeat view.

...  
Pinochet denied  
'superhero' claims  
in interview.

...  
Spain's D'Alema says hopes to  
overcome wilderness.

...  
Italy's D'Alema says hopes to  
overcome wilderness.

## seattle.sidewalk™

- (m) movies
- (r) restaurants
- (a) arts & music

- (o) places
- (s) sports
- (t) travel/entertainment

MARKETS			
<small>Dow Jones Industrial Average</small>			
<small>Market Basket Index</small>			
<small>NYSE Composite</small>			
DJIA	8881.47 ▲	84.77	
Nasdaq	1044.51 ▲	73.87	
Russell 2000	1004.34 ▲	7.82	
Percent	731.48 ▲	0.58	
Average	608.24 ▲	1.24	
<small>Source: Wall Street Journal</small>			

## PRI Public Radio International

Vancouver, BC	48° - 50° N	123° - 124° W	Seattle, WA	47° - 48° N	122° - 123° W
Portland, ME	43° - 44° N	70° - 71° W	Providence, RI	41° - 42° N	71° - 72° W
New York, NY	40° - 41° N	74° - 75° W	Washington, DC	38° - 39° N	77° - 78° W
Los Angeles, CA	34° - 35° N	118° - 119° W	Honolulu, HI	21° - 22° N	157° - 158° W
San Francisco, CA	37° - 38° N	122° - 123° W	London, UK	51° - 52° N	0° - 1° E

WORLDWIDE WEB

## Book – Table of Contents (links)

From the Earth to the Moon

Table of Contents

1 of 436

# From the Earth to the Moon

## TABLE OF CONTENTS

- Chapter 1 The Gun Club
- Chapter 2 President Barbicane's Communication
- Chapter 3 Effect of the President's Communication
- Chapter 4 Reply From the Observatory of Cambridge
- Chapter 5 The Romance of the Moon
- Chapter 6 The Permissive Limits of Ignorance and Belief
- Chapter 7 The Hymn of the Cannon-Ball
- Chapter 8 History of the Cannon
- Chapter 9 The Question of the Powders
- Chapter 10 One Enemy V. 25 Millions of Friends
- Chapter 11 Florida and Texas
- Chapter 12 Urbi et Orbi
- Chapter 13 Stones Hill
- Chapter 14 Pickaxe and Trowel
- Chapter 15 The Fete of the Casting
- Chapter 16 The Columbiad
- Chapter 17 A Telegraphic Dispatch
- Chapter 18 The Passenger of the Atlanta
- Chapter 19 A Monster Meeting
- Chapter 20 Attack and Riposte
- Chapter 21 How A Frenchman Manages An Affair
- Chapter 22 The New Citizen of the United States
- Chapter 23 The Projectile-Vehicle
- Chapter 24 The Telescope of the Rocky Mountains
- Chapter 25 Final Details
- Chapter 26 Fire!
- Chapter 27 Foul Weather
- Chapter 28 A New Star
- Chapter 29 The First Part
- Chapter 30 Twenty Minutes Past Ten

End Page

2
E-Mail
3

### Last Week....

#### Progress

- Drove ePad meeting with Darryl and got our overall design direction approved
- Continued daily meetings on ePad project
- Scheduled meeting with ePad and Neptune teams
- With Drew, got ePad team up on RAID, and VSS
- Got NT box in my office up and running, with ePad installed
- Met with Dave and others about team project archiving. Have defined a basic strategy
- Provided input in to Pam's home tour brainstorming meeting.
- Attended home scheduling meeting.
- Attended Legal briefing.
- Got briefed on current (and past) demo's produced by the team.

#### Priorities

- Drive graphic completion for current M2 features in ePad (11/4)
- Drive overall progress for ePad M2 milestone for Paulina review (11/16)
- Produce first draft proposal for archiving (11/2)
- ePad proto and enter bugs in RAID (first pass 11/2 - ongoing)
- Provide direction and input for directs on projects (on going)
- Plan fun event at home (11/6)

#### Problems

- none

#### Postponed

- none

#### OTHER RELATED MATERIAL

☒ **BY THREAD:**  
Follow the discussion of this topic.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY SENDER:**  
Show other messages from this address.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY DATE:**  
View the next or previous message in date order.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

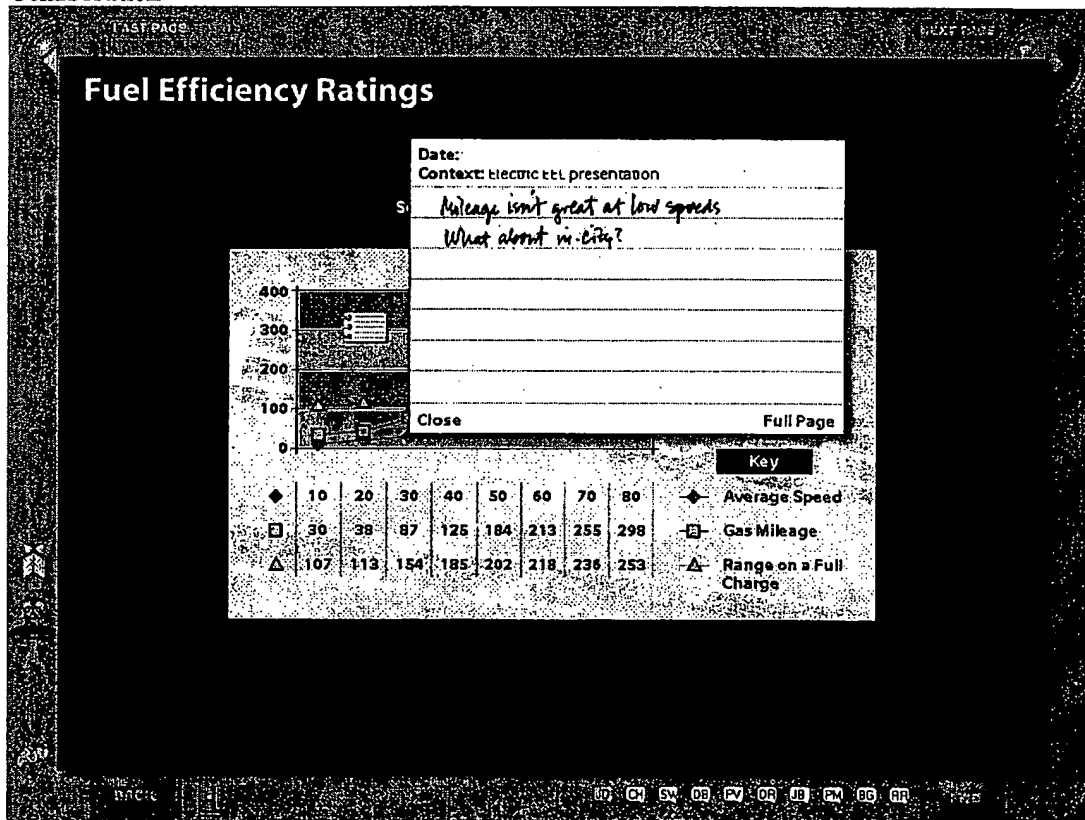
#### OTHER RELATED MESSAGES:

☒ John Beezer - Status

☒ Drew Baird - Status

RE: Page-Pinning

Collaboration


BACK

 BD CH SN OB PY OR JB PM BG AR

Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

Appl. No. : 09/456,249  
Applicant : Darryl E. Rubin et al.  
Filed : December 7, 1999  
Title : Computer User Interface Architecture Wherein Users  
Interact With Both Content And User Interface By  
Activating Links

TC/A.U. : 2176  
Examiner : Almari Romero Yuan

Docket No. : 003797.85089  
Confirmation No. : 6181

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

We, DARRYL E. RUBIN, ANDREW C. BAIRD, JOHN L. BEEZER, JONATHAN C. CLUTS, and SUSAN D. WOOLF, hereby declare<sup>1</sup> that:

- 1) We are named as joint inventors of the above-captioned application, U.S. Application Serial No. 09/456,249, and all claims presently pending therein;
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\_\_\_\_\_  
Date

\_\_\_\_\_  
Andrew C. Baird

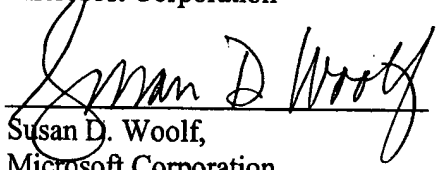
\_\_\_\_\_  
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Date

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Susan D. Woolf,  
Microsoft Corporation

\_\_\_\_\_  
September 17, 2004  
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Appl. No. 09/456,249  
Declaration under 37 C.F.R. § 1.131  
Reply to Office Action of July 8, 2004

## EXHIBIT A

Pages 1, 2, 4, 5, and 7 of Patent Predislosure Document



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**Date:**

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The ability to review files, folders, mail, etc by navigating through a list of the links contemporaneously is enabled by this architecture and to a lesser extent by the Windowless UI architecture. History, notes, clippings and other system-provided directories have many unique attributes as a result of the HTML-based architecture also summarized below.

**Rich Navigation** – The interface contains methods for paging within a document (previous/next) and for traversing chronology (history through back/forward). A rich model for navigation is enabled by attaching properties to links. For example, holding on a link offers additional information about where that link will lead (Link look-ahead might be displayed in thumbnail form and further holding might result in a graphical map of the links attached to that prospective destination.). Back and forward buttons by default display thumbnail views of the pages that tapping that button will lead to.

History (all the pages the user has viewed) may be viewed in a number of ways: by time, by appearance, by site, document, section, page, etc. Since all of history is saved, the users' sequence may be viewed in a number of ways: as nodes with side tracking branches, as a linear list, or as a combination of most recently viewed pages and last few task categories.

A key difference between the navigation mechanism of this invention and the prior art is that all navigation actions are saved in the navigational history. For example, if a user navigates through a set of links then goes "back" several steps, and then links through a different set of links, the user is still able to go "back" and then retrace their original path of links they navigated. In today's browser's this is not possible—recollection of the first set of documents that were "backed" over is lost.

**Annotations** – The interface allows the user to interact with content and interface so as to make it more memorable, via bookmarks, clippings, highlights, overlaid and embedded ink and audio notes (See files: *Book position (ePad) 2.doc, Ink layers on a browser.doc and Bookmark (ePad) 2.doc. as well as additional documents to be created.*) These annotations may be performed with not only different input methods, but adapted to the most convenient or natural one, such as a finger for highlighting, a stylus for writing or doodling, and speech for lengthier commentary.

The annotations exist apart from the content (as files with links to the content); therefore they can be displayed not only layered on the content in appropriate positions within the content, but in other locations and visualizations. That is, each of these annotations is available to the user not only *in situ*, in the content where it was created, but cross-referenced in automatically-created indices which can be manipulated much as described in History above: by time, by appearance, by site, document, section, page, etc. Likewise they might be shared, selectively shared or kept private with the kind of functionality described under "Collaboration."

navigate their view of the shared document to other than the currently shared page, thus automatically disengaging from the shared display, and to reengage on the shared page at any time. The interface uses a Floor request/grant/relinquish model for controlling the group display. Users are able to request control of the current group display, grant the request and relinquish control (if currently in control). Side chats can be initiated with other members attending the meeting by using the "hold-for-more-information" method: holding on a visual representation of users in the room and then selecting the chat option from a content menu. Since in this interface model, presentations are just documents, users can invoke all the standard interface methods such as written and audio note taking, searching, bookmarking, etc. on both the public presentation (if they have the floor), or on their individual private copy. Just as with other annotations, these methods result in a file stored separately from the content, but linked to it in precisely the locations the user annotated.

**Help Book** – Because the commands in the interface are simply links on a page, there isn't any difference between documentation, help, wizards and the other ways we currently attempt to help a user perform an action. Asking for help by clicking on a help link summons an appropriate help page composed on the fly from the content of the help book. The principles which underlie this composition are contextual: that is, if the user currently in the "list" or "books" of Mail Messages, the help system infers that requests for assistance are about how to perform work with Mail Messages.

**Related Ideas addressed in additional pre-disclosure docs**

1. Using pinning to preview list of contents, e.g., email, folders, contacts, notes, etc.; navigate within a book; or to access different content, (*file: Pinning (ePad) 2.doc*). Different than Outlook previews because it is accomplished through html links and can be done with any list of objects.
2. History can be manipulated, sorted, viewed in different ways, and the like. One feature of the history implementation is maintaining all branch extremities and including flexibility for presenting different arrangements for viewing the branches.
3. Notes can also be manipulated, sorted, viewed in different ways but also can be selected resulting in not only opening the note but also the book where the note is linked.
4. Unique thumbnail view UI for notes, history and other objects.
5. Commands implemented through links

**Diagrams and Flow Charts:**

*[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]*

Start Page - Main UI

### MY DOCUMENTS

Personal Viewer Memo

From the Earth to the Moon

Slideshow

more ...

### PROJECTS

one

more ...

### MESSAGES

Jon Cluts, Jon Cluts - Status

Jon Cluts, RE: Contents Menus

Darryl Rubin, RE: Contents Menus

more ...

### STANDARDS

Notes Index

Clippings

History

Quick Sheets

more ...

### TODAY'S HEADLINES

Clinton leaves for Mideast Summit

US stocks climb

more ...

### FINANCIAL

Amazon

Microsoft

Mutual funds

more ...

### ARTS

Beloved Reviewed

Latest releases from Blue Note

Kid's software picks

more ...

### COLUMNISTS

Molly Ivins

David Pogue

Cle Kohn

more ...

### WHAT'S NEW

Electronic books reviewed

Conferences on UI design

Update on Esperanto

more ...

### REUTERS

GENERAL NEWS

Middle East leaders agree to ceasefire

500 die in Mexican earthquake

Strom Leone executes 24 over corruption charges

Italy's D'Alema says he won't leave office soon

Yellish cancels meeting, reveals his anger

BUSINESS NEWS

U.S. blue chips recover, small caps recover on

Market volatility sending consumer wealth - Maxine

Oil extends gains on Mexico strike

German economic outlook seen on global view

Finchett defers, suspended school charges

Strom Leone executes 24 over corruption charges

Italy's D'Alema says he won't leave office soon

### seattle.sidewalk™

movies

restaurants

arts & music

places

sports

travel/view

### MARKETS

DJIA	8861.47	▲	94.71
Nasdaq	1844.81	▲	71.87
S&P 500	1094.34	▲	7.32
Russell 2000	231.48	▲	6.58
FTSE 100	626.74	▲	1.34
DAX	1912.22	▲	10.14

### PRO Public Radio International

Book - Table of Contents (links)

## From the Earth to the Moon

### Table of Contents

1 of 436

#### TABLE OF CONTENTS

- Chapter 1 The Gun Club
- Chapter 2 President Barbicane's Communication
- Chapter 3 Effect of the President's Communication
- Chapter 4 Reply From the Observatory of Cambridge
- Chapter 5 The Romance of the Moon
- Chapter 6 The Permissive Limits of Ignorance and Belief
- Chapter 7 The Hymn of the Cannon-Ball
- Chapter 8 History of the Cannon
- Chapter 9 The Question of the Powders
- Chapter 10 One Enemy V. 25 Millions of Friends
- Chapter 11 Florida and Texas
- Chapter 12 Urbi et Orbi
- Chapter 13 Stones Hill
- Chapter 14 Pickaxe and Trowel
- Chapter 15 The Fete of the Casting
- Chapter 16 The Columbiad
- Chapter 17 A Telegraphic Dispatch
- Chapter 18 The Passenger of the Atlanta
- Chapter 19 A Monster Meeting
- Chapter 20 Attack and Riposte
- Chapter 21 How A Frenchman Manages An Affair
- Chapter 22 The New Citizen of the United States
- Chapter 23 The Projectile-Vehicle
- Chapter 24 The Telescope of the Rocky Mountains
- Chapter 25 Final Details
- Chapter 26 Fire!
- Chapter 27 Foul Weather
- Chapter 28 A New Star
- Chapter 29 The First Part
- Chapter 30 Twenty Minutes Past Ten

## End Page

2
E-Mail
3

### Last Week....

#### Progress

- Drove ePad meeting with Darryl and got our overall design direction approved
- Continued daily meetings on ePad project
- Scheduled meeting with ePad and Neptune teams
- With Drew, got ePad team up on RAID, and YSS
- Got NT box in my office up and running, with ePad installed
- Met with Dave and others about team project archiving. Have defined a basic strategy
- Provided input in to Pam's home tour brainstorming meeting.
- Attended home scheduling meeting.
- Attended Legal briefing.
- Got briefed on current (and past) demo's produced by the team.

#### Priorities

- Drive graphic completion for current M2 features in ePad (11/4)
- Drive overall progress for ePad M2 milestone for PaulMa review (11/16)
- Produce first draft proposal for archiving (11/2)
- ePad proto and enter bugs in RAID (first pass 11/2 - ongoing)
- Provide direction and input for directs on projects (on going)
- Plan fun event at home (11/6)

#### Problems

- none

#### Postponed

- none

#### OTHER RELATED MATERIAL

☒ **BY THREAD:**  
 Follow the discussion of this topic.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY SENDER:**  
 Show other messages from this address.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

☒ **BY DATE:**  
 View the next or previous message in date order.  
[NEXT MESSAGE](#) [PREVIOUS MESSAGE](#)

#### OTHER RELATED MESSAGES:

☒ John Beezer - Status

☒ Drew Baird - Status

☒ RE: Page-Pinning

## Collaboration

